SW860
FlukeView™
Software

Users Manual

FLUKE®

SW860 FlukeView Software

Version 2 (Windows and DOS)

Users Manual

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Introducing FlukeView 860

FlukeView 860 version 2 allows you to capture files of raw data from your 860 Series Graphical Multimeter (GMM). You can then use records within a file to reconstruct GMM displayed information or configurations. This manual describes how to use FlukeView 860 to display records, analyze displayed information, store information to the GMM or PC, and recall information from the GMM or PC.

You can generate reports using your existing word processor or spreadsheet. FlukeView 860 makes it easy to transfer data (both graphics and text) from the GMM to other PC spreadsheet or word processor programs.

You need basic knowledge of Microsoft Windows® and the Fluke 860 Series Graphical Multimeter (GMM) to use this software.

About This Manual

Almost all instructions in this manual apply to both Windows and DOS versions of FlukeView® 860 version 2. For simplicity, it is assumed that you are using Windows. The few differences in DOS usage are discussed in general at the end of this manual.

Note

Refer to Table 8 at the end of this manual for an overview of short cut keys that can be used with FlukeView 860 (Windows and DOS).

What You Need to Start

Computer requirements are as follows:

- Floppy Disk Drive
- Hard Disk Drive
- Serial port (RS-232) configured as COM1: or COM2:
- Windows 3.1 or higher
- 386, 486, or higher PC
- 4 MB RAM (8 MB RAM recommended)
- Mouse, bus or serial. With a serial mouse, you must have another free serial port for your GMM.
- One Fluke 860 Series GMM can be supported.
- Printer (optional). A PostScript or HP printer is required for printing graphical images.

Installing FlukeView 860

To install FlukeView 860 from Windows, use the following procedure:

1. Find the 3.5-inch disk labeled "FlukeView 860 Windows, P/N 948968."
2. Insert the disk in the a: or b: drive. The following steps assume that you are using the b: drive. If you are using the a: drive, substitute a: wherever you see b:.
3. Select File - Run. The Run dialog box appears.
4. Type **b:setup** in the Command Line area of the box, and click OK.
5. The Installation Path dialog box appears and lists a directory to be created. Click Install if the name and path are acceptable. If you want a different directory or path, type your choice and click Install.

In Program Manager, look for the FlukeView window with the icon shown in Figure 1. After you connect the serial cable, double-click this icon to start FlukeView 860. If you want to start FlukeView 860 now, double-click this icon and open a sample file.

c0058s.tif

Figure 1. FlukeView 860 Icon

Connecting the PC to the GMM

Finding Your Serial Port

The serial port (either a 9-pin or a 25-pin connector) is usually located on the back or side of the PC. If necessary, consult your computer documentation to determine which connector to use. Make sure you use COM1 or COM2; do not use the parallel Printer Port.

Installing the Serial Cable

Connect the GMM to the computer as shown in Figure 2.

Note

Do not press [SAVE PRINT] on the GMM when FlukeView 860 is communicating with the GMM. FlukeView 860 requests information from the GMM as needed. When [SAVE PRINT] is pressed, the GMM sends information asynchronously to your PC and disrupts the orderly transactions maintained by the software.

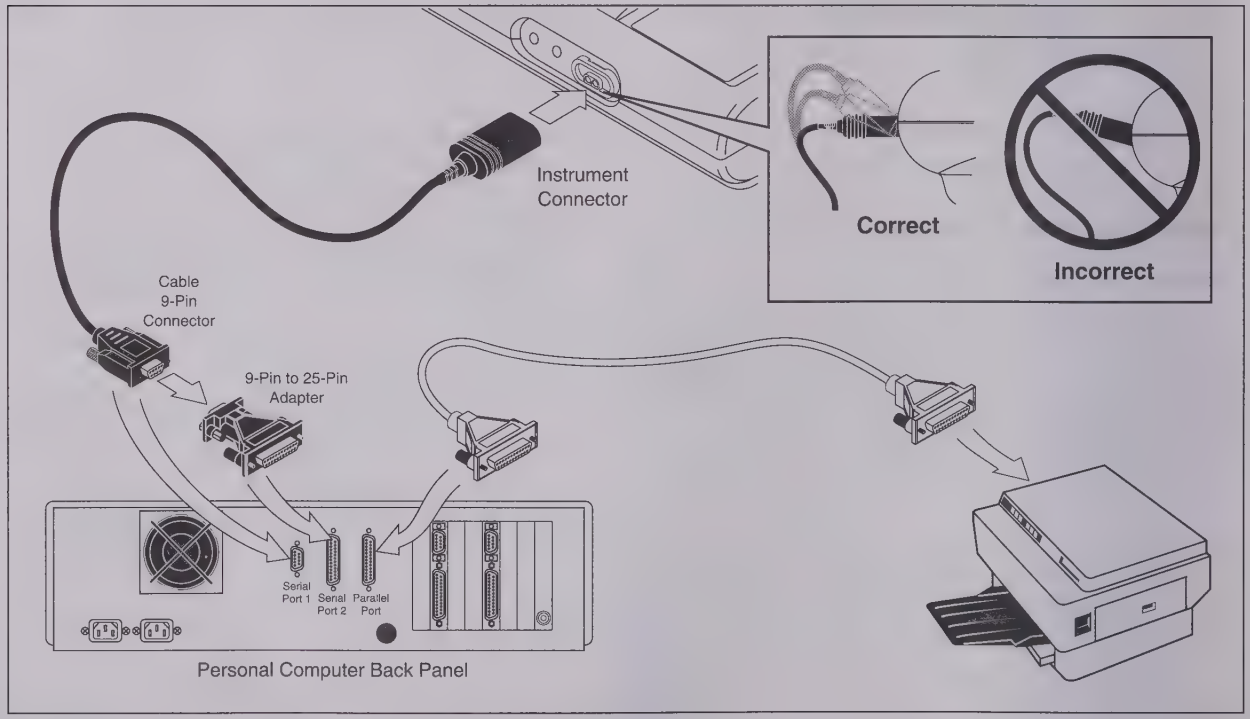


Figure 2. Making Connections

Starting FlukeView 860 Using AutoConnect

With the serial cable connected and the GMM turned on, double-click the FlukeView 860 icon to start the program. After a moment, a dialog box opens and informs you that various com port (COM1, COM2), baud rate (1200, 9600, 19200, 4800, 2400), and parity (no, odd, even) combinations are being attempted.

Note

FlukeView 860 cannot connect if the GMM rotary selector is in Set Up.

FlukeView 860 tries the most recently used combination first, then cycles through other most likely combinations. If a serial mouse is connected to COM1, only COM2 is tested.

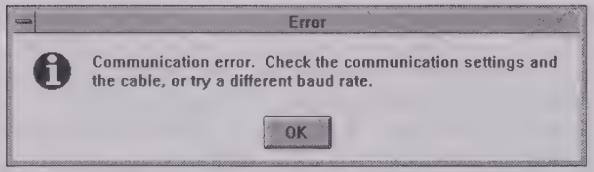
You have two choices while AutoConnect is running:

- Click Cancel (or press the space bar) and proceed directly to an empty File Window without connection to the GMM. You can now use the Manual Connect procedure.
- Wait until all com port, baud rate, and parity combinations have been tried. (This process takes a minute or two.) If no combination works, FlukeView 860 reverts to an empty File Window. "FlukeView 860 (no connection)" is displayed in the status bar; the PC cannot communicate with the GMM, but you can still open a PC file to exercise many of the FlukeView features. You can also use the Manual Connect procedure.

You will know that communications have been established when an empty file window opens and a message (GMM model, GMM software version, GMM serial number) appears in the status bar. You can now open a sample file or communicate directly with the GMM.

If AutoConnect Fails

If communications are not established readily, FlukeView 860 continues cycling through COM port, baud rate, and parity combinations. If FlukeView 860 returns the error message shown in Figure 3, AutoConnect has failed.



c0025s.tif

Figure 3. Communication Error Message

First check that the serial cable is securely connected at the GMM and the PC. If this connection is good, the message may have appeared if AutoConnect has not established initial communications, after you have changed Baud Rate or Parity on the GMM, or if you have changed Com ports on the PC. The Options - Communications dialog box allows you to change communication parameters after FlukeView 860 has opened in a new file (with or without actual connection to the GMM.)

Disabling AutoConnect

Disable the AutoConnect feature by adding the /n switch to the command line as follows:

1. From Program Manager, make sure the FlukeView program group is the active window, then select File - Properties.
2. Add the /n switch as shown in Figure 4 and click OK.
3. AutoConnect will now not be used for subsequent FlukeView 860 start ups. Use the manual connect procedure.

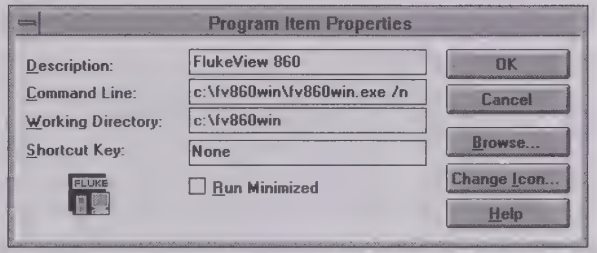


Figure 4. Using the /n Command Line Switch

Changing Communication Settings (Manual Connect)

Use the following procedure to select communication settings manually:

1. In the Options - Communications dialog box (Figure 5), choose communication settings to match those on the GMM:

   - Baud Rate: Select the rate shown on the GMM Set Up screen.
   - Parity: Select Odd, Even, or No, depending on the GMM Set Up screen selection.
   - Port: Select Com 1 or Com 2, depending on the Serial Cable connection point.

   Note

   To view or change the Baud Rate or the Parity on the GMM, refer to "Changing the Configuration" in Chapter 6 of the 860 Series Users Manual.

2. Whenever you are ready, click OK to try out the new settings. (Or click Cancel to go back to the old settings.) If the connection works, FlukeView 860 responds by identifying the GMM model, version, and serial number in the Status Bar. If there is no connection, a dialog box returns with:

   Communications Error - check the communication settings and the cable.

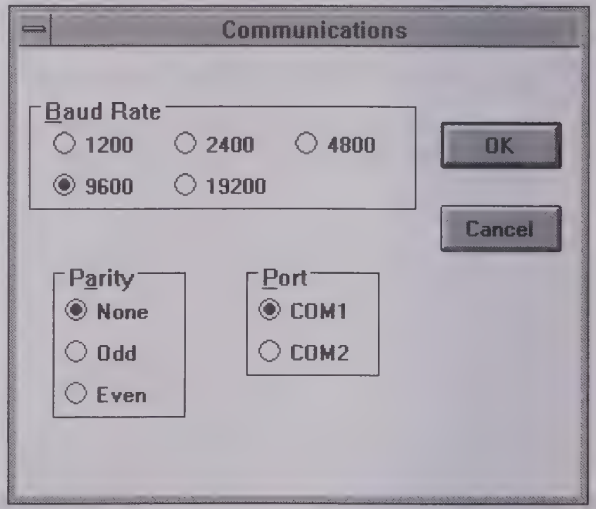


Figure 5. Options - Communications Dialog Box

Getting Acquainted with FlukeView 860

FlukeView 860 uses an open file as a workspace. Each activity you perform creates a new record in this file. This centralized approach to data collection offers the following advantages:

- You can collect a large sampling of trend, screen picture, waveform, and configuration records for later analysis.
- You can create an activity history.
- You can easily flip back-and-forth between activity records.
- You can store a complete FlukeView 860 session as a single file.

The Main Window

The Main Window appears whenever you start FlukeView 860, whether AutoConnect is able to establish communications or not. Refer to Figure 6 and Table 1 for descriptions of Main Window features.

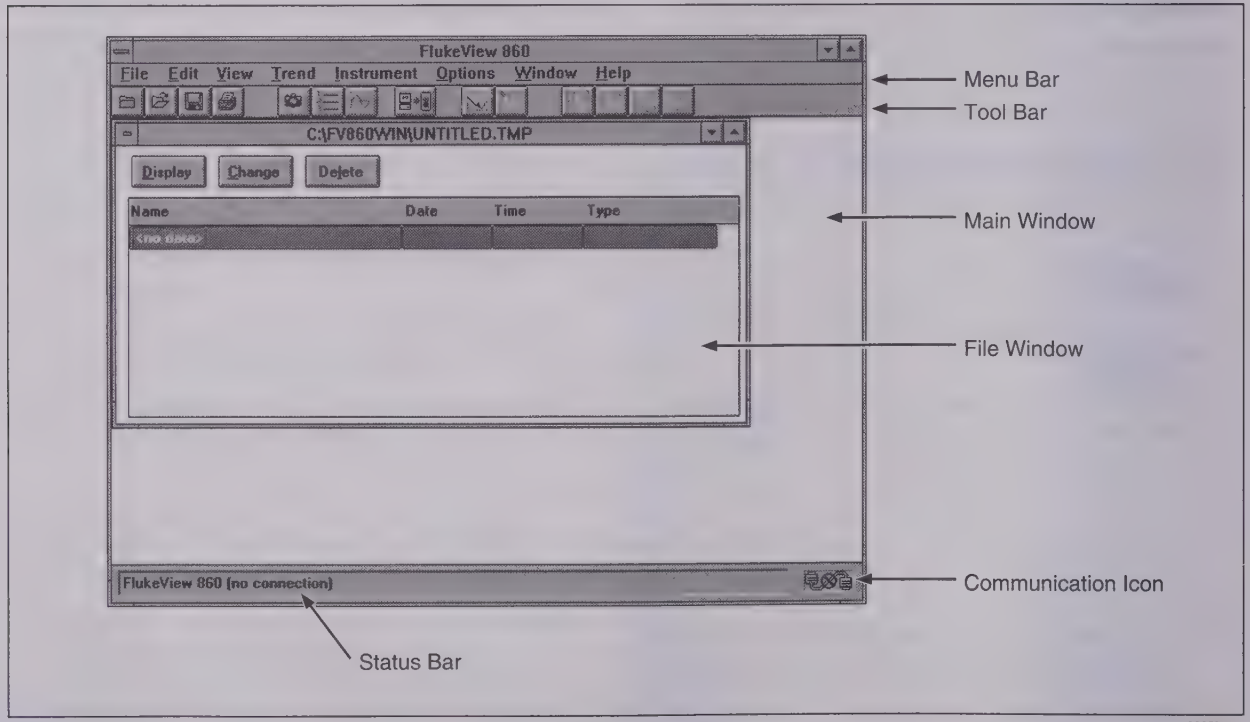


Figure 6. Main Window

Table 1. Main Window Features

Menu Bar	Pull-down menus that allow access to all FlukeView 860 features.
Tool Bar	Icons that allow access to commonly-used FlukeView 860 features.
File Window	An area that shows the contents of one open file. The opened file shows a list of records, each representing a type of information retrieved from the GMM. The File Window represents records retrieved from the GMM during the present session or a set of records recalled as a file stored on the PC.
Status Bar	An area that shows information about the state of PC-GMM communications and FlukeView 860 operations. If FlukeView 860 is presently busy doing something else, a new message (e.g., Getting Waveform) momentarily replaces the communications message.
Communication Icon	The lower right corner of the Main Window describes the status of GMM-to-PC communications with one of the following icons: The GMM is connected and communicating properly with the PC. The GMM is not communicating with the PC. The serial cable may be not be connected, or you may have started FlukeView 860 without connecting.

The File Window

A File Window must be opened before you can use FlukeView 860. Only one file can be open at a time; opening a new file automatically closes any file already open. If changes have been made, FlukeView 860 prompts you with a dialog box ("Would you like to save the changes? ") prior to closing a file.

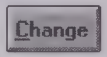
Any GMM data transfer activity undertaken while a file is open creates a new record in that file. As shown in Figure 7, each record in a file is identified by Name; Date acquired, Time acquired, and Type of information. Names are assigned automatically by FlukeView 860 and can subsequently be changed. Date, Time, and Type are also assigned automatically, but cannot be changed.

Note

Although the GMM has a timer for elapsed time indications in trend measurements, it does not have an actual clock for assigning date and time. Therefore, if you get a waveform or configuration directly from GMM memory, date and time describe the moment of retrieval by the PC, not the moment of original storage on the GMM.

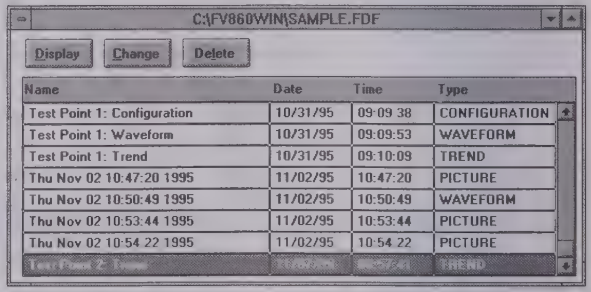
Once you have selected (highlighted) one of the records, use the following buttons:

Show the contents of the selected record. A screen picture, waveform, configuration, or trend data then opens in a new window.



Change the Name of the selected record. You can also specify an annotation for this record and choose whether the annotation is displayed with the contents or only seen when Change is selected again.

Allows you to delete the selected record. You must click OK in the confirmation box to complete the deletion.



c0023s.tif

Figure 7. File Window

Files and Records

A file provides a place to store individual records gathered during FlukeView 860 operation. A record can represent trend data, a configuration, a waveform, or a screen picture retrieved from the GMM during the session in which the file was open. Therefore, each file represents a collection of all activities (records) during a FlukeView 860 session.

FlukeView 860 files are stored on the PC as binary files with an extension of .fdf. These binary files can only be read by FlukeView 860.

Any number of .fdf files can be stored. Related records can be stored in their own files or under similar record names in the same file. For example, Test Point 1: Configuration, Test Point 1: Waveform, and Test Point 1: Picture could supply you with all the information needed to set up the GMM and check for an anticipated waveform.

Screen Pictures and Waveforms

There is an important distinction between screen pictures and waveforms. A screen picture is a full snapshot of the present GMM screen (including softkey labels.) A waveform is only a graphical representation of information available with a GMM screen; only time and amplitude units are included with the waveform.

The following features distinguish waveforms from full screen pictures:

- A waveform can be viewed and analyzed in different ways (Min/Max, cursors, and scaling); these features are not available with screen pictures. Pictures are only screen captures and do not include information that can be analyzed further.
- Unlike screen pictures, waveforms can be retrieved directly from GMM memory.
- If you attempt to retrieve a waveform (present or memory) in a GMM function that has no graphical information (e.g., GMM in Meter Mode), FlukeView 860 returns the following error message:

  Error getting Waveform. Make sure the instrument is in a valid mode for Waveform capture.
- You can retrieve a screen picture with any GMM function and display mode combination.
- Screen picture retrievals can also be made when a screen memory has been recalled and is being displayed in Freeze mode. This allows you to recall a screen memory and take a snapshot of it. Only the frozen (reverse video) portion of the recalled screen can be captured as a picture by FlukeView 860; softkey labels are not included.

Trend Data

The GMM provides a very useful ability to monitor (sample) measurements over a set period of time (interval.) The resulting set of readings provides an activity log. You can collect trend data in the following GMM functions: VAC, VDC, mVDC, Ohms/Continuity, A, and mA/uA.

FlukeView 860 greatly expands the GMM's trend capabilities by providing remote control, storage, and analysis of trend data. Use FlukeView 860 in any of the following ways to access trend data:

1. Control the gathering of new trend data by the GMM on a continuous basis by selecting Trend - Start and Trend - Stop from FlukeView 860.
2. Retrieve trend data already being gathered by the GMM by selecting Instrument - Get Waveform - Present.
3. Retrieve trend information stored in GMM memory by selecting Instrument - Get Waveform - (1 .. 3).
4. Access trend data stored on the PC by selecting a trend record in the File Window and clicking Display.

Note

When the GMM is gathering trend data, changing the Trend Type on the GMM causes FlukeView 860 to stop collecting data.

Configurations

The GMM's configuration defines all the settings and choices needed to make and display a particular type of measurement. The GMM keeps a record of the configuration presently in effect; the GMM can also use any of several different configuration records stored in the GMM memory. Settings and choices necessary to obtain a particular type of measurement can thereby be recreated easily.

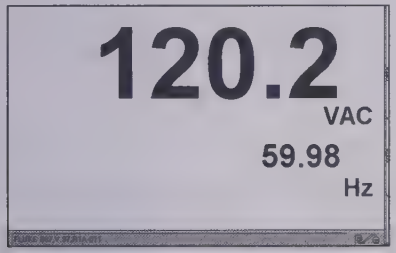
FlukeView 860 expands on this configuration memory capability by allowing you to store any number of configuration records on the PC. You can then download (Instrument - Send To) any configuration record to one of the seven GMM configuration memory locations, programming a GMM for streamlined measurement taking.

Note

Configuration records contain read-only information and cannot be edited or changed from FlukeView 860.

Instrument Display

Select Instrument - Instrument Display to start or stop a continuously updating numeric display of the present GMM reading. See Figure 8. You can use this feature as a highly visible demonstration or as a remote monitor.



c0111s.tif

Figure 8. Instrument Display

Opening an Existing FlukeView 860 File: An Example

Open a sample file to get acquainted with FlukeView 860 features. (A sample file can be opened with or without an operating GMM-PC communication link.) Use the following procedure:

1. Double-click the FlukeView 860 icon.
2. From the menu bar, select File - Open. A list of files appears.
3. Choose sample.fdf. The selected file opens, showing the following records:
   - Test Point 1: Screen Picture: a stored capture of the full GMM screen.
   - Test Point 1: Configuration: text information about the GMM Setup used to establish the screen picture.
   - Test Point 1: Waveform: a stored capture of only the graphical information present on the GMM screen (Combo or View mode.)
   - Test Point 1: Trend: a retrieval of stored trend data. View this data as text (with each line representing one measurement) or as a graph.
4. Open the waveform record by highlighting the appropriate line and clicking Display. After a brief pause, FlukeView 860 creates a new window from the waveform record.
5. Switch back to the list of records by pressing Ctrl Tab, (or by selecting Window - File Contents.)

6. Annotate the same waveform record. With the record still selected, click Change. The Change dialog box (Figure 9) appears. Specify a new record name and a text annotation (notes) to accompany the waveform. Click Display on Window if you want the annotation to appear with the waveform. See Figure 10. Click OK when you are done.

7. With the waveform displayed in its own window, select File - Export. FlukeView 860 now provides a .csv (comma-separated values) file extension. Data saved with this extension can be used in other Windows applications.

8. To delete a record, return to the list of records, select the record, and click Delete. A dialog box opens (Are you sure you want to delete this record?) Click Cancel to stop the deletion and save this record for future use.

9. Select File - Save to save any changes you have made in sample.fdf. If this is a new file, FlukeView 860 provides a .fdf file extension and prompts you for a file name. A file saved with this extension can be used again by FlukeView 860.

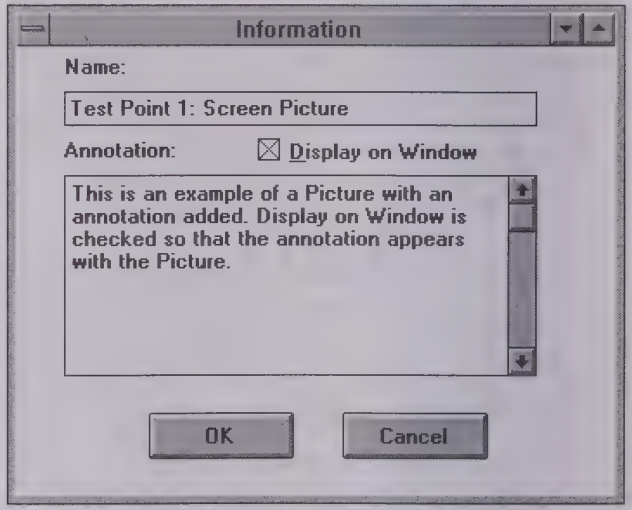

Information
Name:
Test Point 1: Screen Picture
Annotation:
Display on Window
This is an example of a Picture with an annotation added. Display on Window is checked so that the annotation appears with the Picture.
OK
Cancel
c0030s.tif

Figure 9. Changing a Record

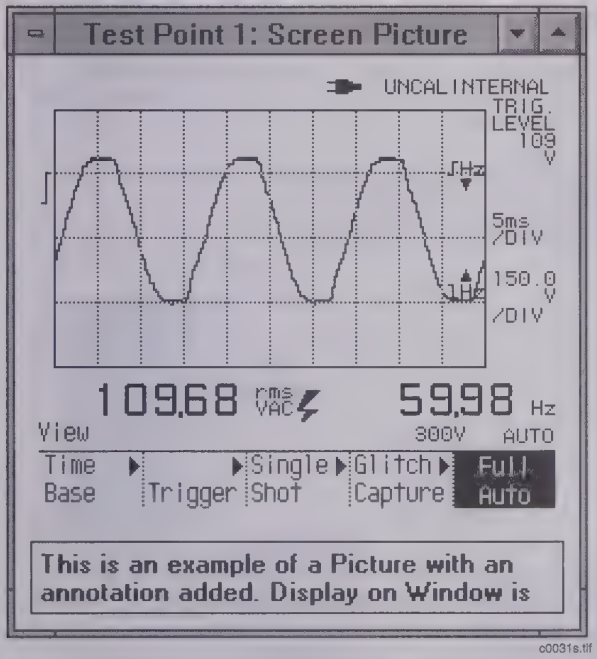


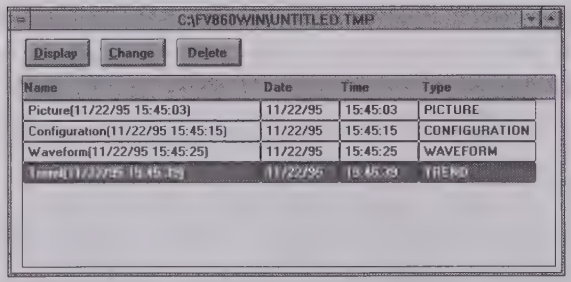
Figure 10. An Annotated Screen Picture

Working With a New File: An Example

A new file is created whenever you start FlukeView 860. Use the Menu Bar or the Tool Bar to exercise features and create records in this file. With the GMM and PC connected and communicating, use the following procedure to create a set of records in the new file:

1. Select Instrument - Get Picture. "Getting Picture" appears in the Status Bar. A new record is added to the file, and the screen picture appears as a new window. Close the screen picture window.
2. Select Instrument - Get Configuration. Select Present - OK in the dialog box. Getting Configuration appears in the Status Bar while the data is being retrieved. A new record is added to the file, and the configuration appears as a new window of text information. Close the configuration window.
3. Select Instrument - Get Waveform. Select Present - OK in the dialog box. Getting Waveform appears in the Status Bar while the data is being retrieved. A new record is added to the file, and the waveform appears as a new window. Close the waveform window.
4. Select Trend - Start. Trend measurements now appear in a new window. Allow several readings to be logged.

5. Select Trend - Stop. Trend measurements stop and a record of all readings taken between Start and Stop is added to the file.
6. Select View - Trend Graph to graph trend measurements. Close the trend window.
7. These four records are shown in Figure 11.
8. Select File - Save. FlukeView 860 prompts you for a file name. Enter a name and click OK. The .fdf extension is added automatically.



c0028s.tif

Figure 11. Records Created in a New File

Using the Menu Bar

Use the Menu Bar to make selections from pull-down menus. Refer to Figure 12 and Table 2 for descriptions of the Menu Bar.

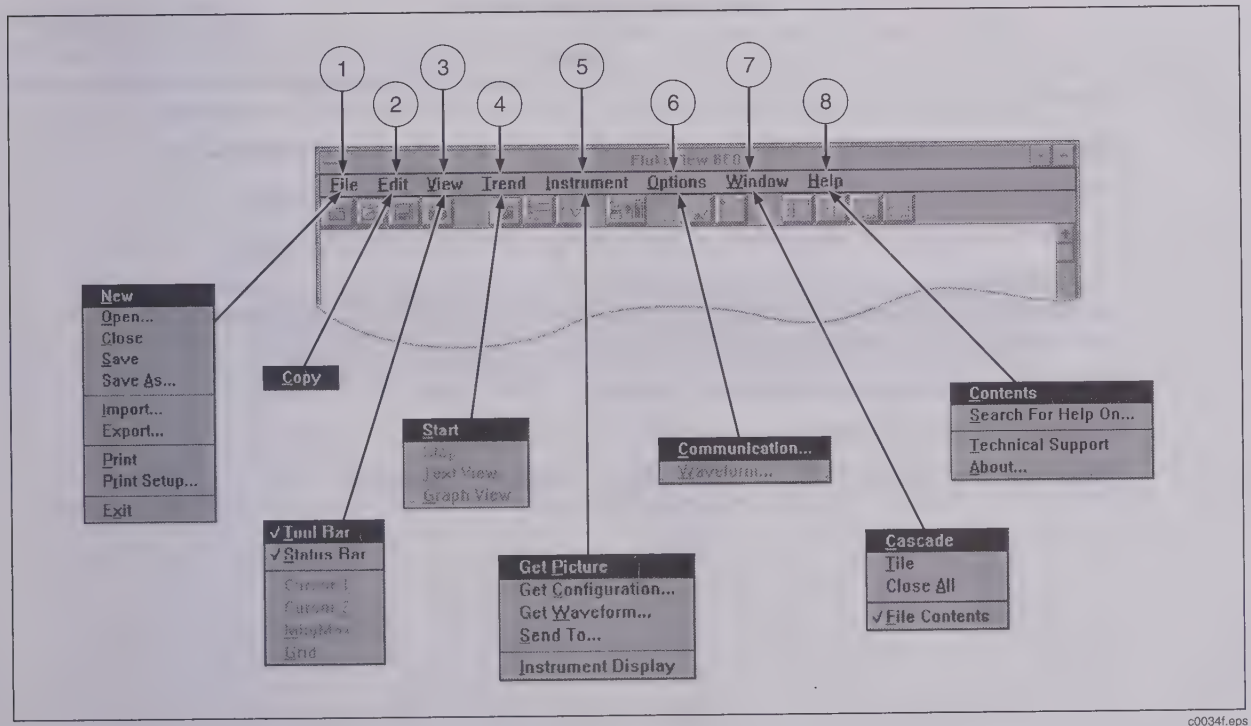


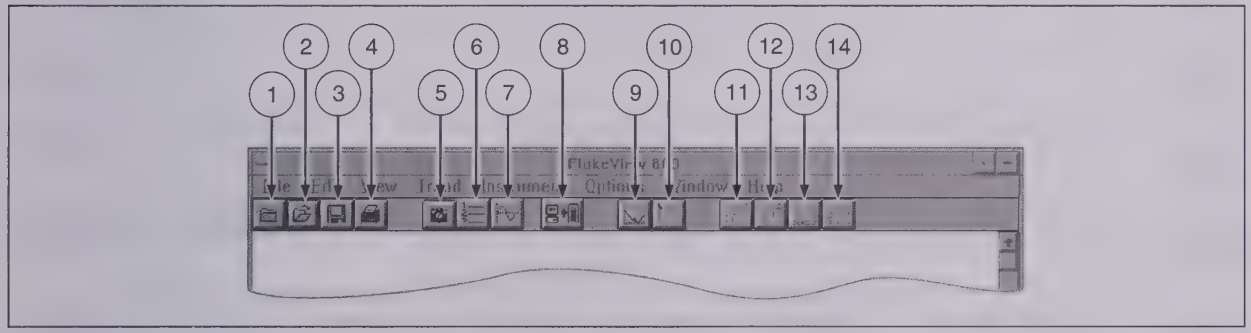
Figure 12. Menu Bar

Table 2. Menu Bar Descriptions

No.	Name
1	**File:** Open, save, import, export, and print files.
2	**Edit:** Copy your data to the Windows clipboard. (Not available in DOS version of FlukeView 860.)
3	**View:** Controls display of the tool bar, status bar, cursors, grid, and min/max calculations.
4	**Trend:** Start or stop trend data collection. Control display of this data as text or as a graph.
5	**Instrument:** Direct communications with the GMM. Retrieve (Get) a screen picture, a waveform, or a configuration. Send a configuration or a waveform to a GMM memory location. View updating GMM measurements in real time with Instrument Display.
6	**Options:** Manually change Communication settings or waveform scaling.
7	**Window:** Organize your windows or go directly to an open window.
8	**Help:** look up how to use FlukeView 860 features or find technical assistance.

Using the Tool Bar

Use the Tool Bar to make selections with icon buttons that are equivalent to Menu Bar selections. Refer to Figure 13 and Table 3 for descriptions of the Tool Bar.



c0033f.eps

Figure 13. Tool Bar

Table 3. Tool Bar Descriptions

	No.	Name	Description
	1	File - New	Creates a new file. Closes any file already open. If necessary, you are prompted to save or name the old file.
	2	File - Open	Open an existing file.
	3	File - Save	Save the file (which remains open.)
	4	File - Print	Print the displayed window (screen picture, waveform, configuration, or trend data.)
	5	Instrument - Get Picture	Retrieves the present screen picture from the GMM.
	6	Instrument - Get Configuration	Retrieves the present GMM configuration or one of the GMM configuration memories.
	7	Instrument - Get Waveform	Retrieves the present GMM waveform or one of the GMM waveform memories.

Table 3. Tool Bar Descriptions (cont.)

	No.	Name	Description
	8	Instrument - Send To	Send a configuration or a waveform to a memory location in the GMM.
	9	Trend - Start	Start trend data collection.
	10	Trend - Stop	Stop trend data collection
	11	View - Cursor 1	Click to turn Cursor 1 on or off when a waveform or trend graph is active. The Cursor 1 value appears below the waveform. Turning Cursor 1 off when Cursor 2 is on turns both cursors off.
	12	View - Cursor 2	Click to turn on Cursor 2 when a waveform or trend graph is active and Cursor 1 is on. Click again to turn Cursor 2 only off. Cursor 1, Cursor 2, and difference (delta) values appear below the waveform.
	13	View - Min/Max	Turn Peak Min and Peak Max calculations on or off when a waveform is active. Turn Minimum, Maximum, and Average calculations on or off when Trend Text or Trend Graph is active.
	14	View - Grid	Turn the X-Y grid on or off when a waveform or a trend graph is active.

Reading the Status Bar

The Status Bar appears along the bottom of the display. Usually, the Status Bar simply tells you whether FlukeView 860 has communications with the GMM. Two types of communication messages are possible:

- FlukeView 860 (no connection)

  This message means that FlukeView 860 has not established communications with the GMM. It appears after FlukeView 860 has tried all possible baud rate, parity, and com port combinations without success. The GMM may be off, or the serial interface cable may be disconnected. This message also appears if you click Cancel during the initial AutoConnect procedure when FlukeView 860 is started. Without communications with the GMM, FlukeView 860 displays the following message whenever an Instrument - Get (or Send To) is attempted:

  There is not a communication connection established yet, would you like to AutoConnect?

- FLUKE 867,V1.0,000000000

  This message appears when FlukeView 860 has established communications with the GMM. The message identifies the GMM model number (867), software version (V1.0), and serial number (000000000).

At other times, the communication message is replaced with one of the messages shown in Table 4.

Table 4. Status Bar Messages

Closing File	A File - Close has been initiated.
Creating File	A File - New has been initiated.
Exporting File	A File - Export - (selection) has been initiated.
Getting Configuration ...	An Instrument - Get Configuration has been initiated.
Getting Picture ...	An Instrument - Get Picture has been initiated.
Getting Waveform ...	An Instrument - Get Waveform has been initiated.
Importing File	A File - Import - (selection) has been initiated.
Opening File ...	A File - Open has been initiated.
Opening Record	Display has been clicked for the selected record in the File Window.
Printing Data	A File - Print has been initiated with one of the following types of windows selected: configuration, waveform, screen picture, trend (text/graph view.)
Saving File ...	A File - Save/Save As has been initiated.
Sending Data ...	An Instrument - Send To has been initiated to send the presently displayed waveform or configuration to a GMM waveform or configuration memory, respectively.
Starting Trend ...	A Trend - Start has been initiated.

Screen Pictures

You can use FlukeView 860 to retrieve a full picture of the present GMM screen. The PC displays the full GMM screen with all measurement readings and/or waveforms and softkey definitions. An example screen is shown in Figure 14.

The screen picture can be of anything presently displayed on the GMM. Any function and display mode combination that is displayable on the GMM can be retrieved as a screen picture.

To view a screen picture with FlukeView 860, either retrieve the present screen picture directly from the GMM (Instrument - Get Picture) or open an existing screen picture record in the File Window.

To open an existing screen picture record, select a screen picture in the File Window and click Display. The screen picture appears in a new window.

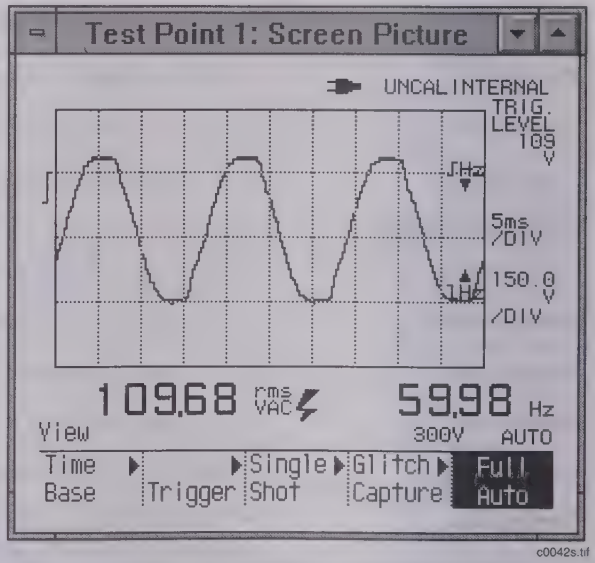


Figure 14. A Screen Picture

Getting a Screen Picture from the GMM

FlukeView 860 retrieves pictures of the full screen presently displayed on the GMM. You cannot retrieve a full screen picture directly from GMM memory.

1. With the desired screen displayed on the GMM, select Instrument - Get Picture.
2. On the GMM, the display freezes momentarily while the screen picture is transmitted to the PC.
3. On the PC, a new screen picture record appears in the File Window, and a new screen picture window opens.

Note

If you need to retrieve a screen picture from GMM memory, first recall and display the screen on the GMM, then retrieve this screen picture using FlukeView 860 (Instrument - Get Picture). Softkey labels are not available if a screen picture is recalled from GMM memory.

Adding a Screen Picture to a FlukeView 860 File

Save an active GMM screen picture to your FlukeView 860 file with the following procedure:

1. Select File - Open (or New) to open a file.
2. Select Instrument - Get Picture. The GMM momentarily freezes its screen while the information is transmitted to the PC. The screen picture record appears in the file, and then the screen picture itself appears in a new window.
3. To change the name of the record, click Change in the opened file. An Information dialog box appears.
4. Change the name of the record and annotate it with any information needed.
5. To display the annotations at the bottom of the window, select Display on Window.
6. Click OK. The new name appears in the record line and in the picture window. If selected, your notes appear at the bottom of the picture window. If not selected for display, your notes can be viewed and edited at any time by clicking Change again.
7. Select File - Save to store the picture record in the current file.

Printing a Screen Picture

You can print any screen picture displayed in its own window on FlukeView 860. This can be a window opened from a record in the File Window or a window created with Instrument - Get Picture. Select File - Print to initiate printing.

Exporting a Screen Picture to Other Applications

You can export a screen picture for use in another software application. The export procedure saves the screen picture window as a .pcx file that can then be imported into the other application. Use the following procedure:

1. Open a screen picture window either by selecting a screen picture record in the File Window and clicking Display or by selecting Instrument - Get Picture.
2. Select File - Export. The Export dialog box (Figure 20) appears with .pcx filename extensions.
3. Type in a file name and click OK. The screen picture is now saved to the specified file and is ready to be placed in another software application.
4. Start the destination application software and insert the exported screen picture file. For example, in Microsoft Word, select Insert - Picture and specify the desired .pcx file.

Waveforms

A waveform is a graphical display of measurement values over time. A waveform differs from a screen picture in that it can be retrieved directly from GMM memory, and it can be analyzed further with Min/Max, cursor, and scaling views. Open a waveform record from the File Window by selecting the record and clicking Display.

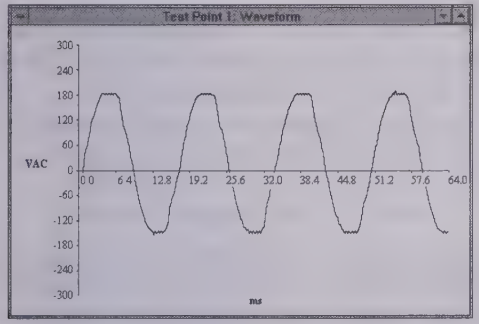
The GMM displays waveforms in several, but not all, functions and display modes. If a waveform is available in the present GMM display or in a waveform memory location, it can be retrieved by FlukeView 860. Generally, a waveform can be retrieved from the present display if the GMM is set for Combo Mode or View Mode (VAC, VDC, mVDC, A, or mAuA.) A waveform cannot be retrieved if the GMM is set for Meter Mode or if Logic or Set Up has been selected; no graphical information is available. If the present screen has no graphical information (e.g., Meter Mode is in use), the following error message is returned:

> Error getting Waveform. Make sure the instrument is in a valid mode for Waveform capture.

If the selected GMM waveform memory contains trend information, the following error message is returned:

> The incoming data is a trend record. Data will be presented in a trend window.

Component Test signatures are treated as regular waveforms, but do not allow for Min/Max, cursor, and scaling functions.



c0043s.eps

Figure 15. A Waveform

Getting the Present GMM Waveform

You can retrieve a snapshot of a waveform that is presently active on the GMM screen. The GMM must be in a function and display mode (view or combo) that allows display of waveforms. Use the following procedure:

1. On the GMM, make sure a function and display mode combination that supports waveforms is selected. For example, VAC in View Mode would be a good choice. VDC in Meter Mode would not provide a waveform.
2. From FlukeView 860, select Instrument - Get Waveform ... A Get dialog box appears with four selections.
3. Select Present in the dialog box; then click OK. The waveform presently displayed on the GMM is retrieved and displayed in a new window on the PC.

Getting a Stored GMM Waveform

You can also directly view a waveform that is stored in GMM memory. Unlike screen picture retrieval, the waveform does not need to be recalled to the GMM screen. Therefore, the present function and display mode on the GMM do not need to support waveform display. Use the following procedure to Get a stored waveform:

1. Select Instrument - Get Waveform ... The Get dialog box appears with three memory locations.
2. Select one of the GMM waveform memories; then click OK. The stored waveform is retrieved and displayed in a new window on the PC.

3. If there is nothing stored in the selected memory, the following message is returned:

   No data was saved in this memory location.

4. If the selected memory contains non-waveform data (e.g., a Meter Mode screen), the following message is returned:

   No waveform data in this location.

5. If you attempt Instrument - Get Waveform while the present GMM display or the selected memory location is in Trend Mode, the following message is returned:

   The incoming data is a trend record. Data will be presented in a trend window.

   Although a Trend Graph View does contain graphical information, it is not treated as a real-time waveform by FlukeView 860. Click OK to add a trend record to the FlukeView 860 file.

Using Cursors for Waveform Analysis

You can enable concurrent text display of waveform data at one or two cursor points. A crosshair appears for Cursor 1, and an X appears for Cursor 2. Time of occurrence and amplitude are then displayed for the selected point(s). When both points are used, difference (delta) time and amplitude values are also calculated and displayed. Refer to Table 5 and Figure 16. Use the following procedure:

1. Start with a waveform displayed in the active window on FlukeView 860.
2. Select View - Cursor 1. A crosshair appears at the left edge of the waveform. At the bottom of the screen, actual time and amplitude appear.
3. Select View - Cursor 2. An X appears at the left edge of the waveform. At the bottom of the screen, actual time and amplitude for the X icon appear.

   Note

   To reposition the selected cursor, move the mouse pointer to a new position on the waveform and click once. You can also click and drag either the crosshair or X cursor. With the keyboard, reposition the crosshair or the X with the right and left arrow keys.

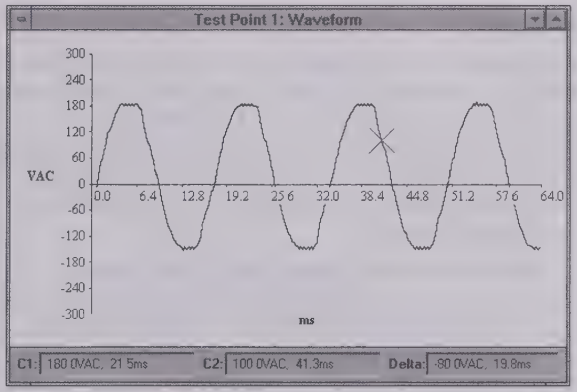
4. The delta time and amplitude values appear in a third box when both cursors are active. You can turn Cursor 2 off and on independently. Turning Cursor 1 off deactivates both cursors.
5. After activating both cursors, use the Tab key or the right mouse button to toggle between the crosshair and the X.

Viewing Peak Min and Peak Max with Waveforms

You can direct FlukeView 860 to calculate and display the minimum and maximum peak values encountered on the present waveform. With the waveform displayed, select View - Min/Max. The minimum and maximum values appear at the top of the waveform window. Refer to the waveform window shown in Figure 16. This waveform shows results of the View menu selections shown in Table 5.

Table 5. Waveform Analysis (View)

View Menu Selection	Resulting Display Feature
√ Cursor 1	C1 amplitude and time.
√ Cursor 2	C2 amplitude and time.
√ Min/Max	Peak Min and Peak Max values.
√ Grid	Grid pattern on display.



c0020s.tif

Figure 16. Waveform Analysis

Using Waveform Scales

You can change the waveform X and Y scales to alter the amount of waveform presented in the window. This feature allows you to 'zoom' in on part of a waveform by decreasing X or Y scale factors or 'zoom' out by increasing X and Y scale factors. Waveform scale changes are for analysis only; changed scale factors cannot be saved with the waveform record.

1. With the waveform window open, select Option - Waveform ... The Waveform Scale dialog box (Figure 17) appears with preset Min and Max time scale (X-axis) and Range (Y-axis) values to allow for a meaningful display of the waveform.
2. Enter the desired Min and Max horizontal time scale points for display along the X-axis.
3. Enter a single Range value to define the negative and positive amplitude scale on the Y-axis.
4. Click OK. Only the portion of the waveform defined by your Min, Max, and Range settings now appears. See Figure 18 for before-and-after waveform zoom examples.

Note

To restore the original scale factors, close and then reopen the waveform window.

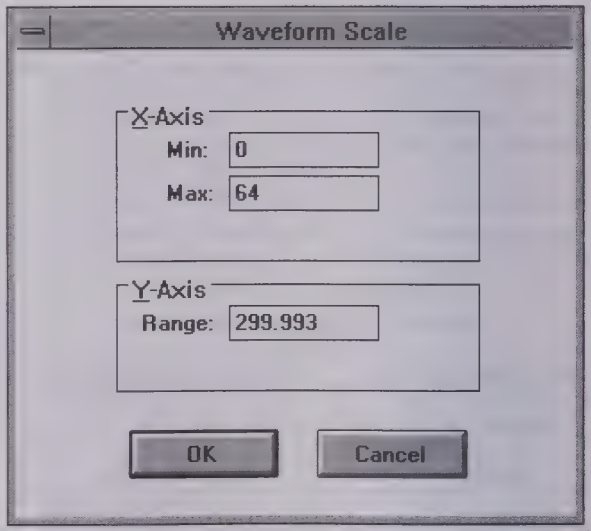
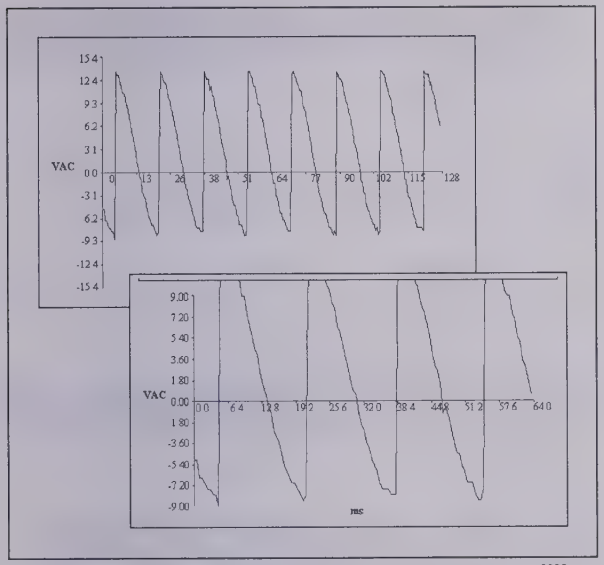


Figure 17. Waveform Scale Dialog Box



c0099c.eps

Figure 18. Waveform Scaling (Zoom)

Sending a Waveform to GMM Memory

You can send a waveform from FlukeView 860 to one of the three GMM waveform memory locations. The source can be any waveform that is shown in its own window.

Note

A waveform sent to GMM memory automatically replaces any waveform already stored in the selected memory location.

Sending waveforms to the GMM can be useful in the following situations:

- You can remotely store a (present) GMM waveform to GMM waveform memory. First, get the present waveform, creating a waveform record. With this record displayed in its own window, send to memory 1, 2, or 3 on the GMM.
- You can rearrange GMM memory. First, get the waveform from GMM memory to create a new record in the FlukeView 860 file. With this record displayed in its own window, send to a different memory location on the GMM.
- You can download waveform records stored in a FlukeView 860 file to the GMM memory. This feature can be useful for comparing a present waveform with a sample stored in memory.

Before you send a waveform, you may want to verify that the GMM waveform memory (1, 2, or 3) is empty or contains a waveform that you do not need. Use either of the following two procedures:

- From the GMM, press [SAVE PRINT] and [2] to view the memory list. Then press [1] or [2] to select screen (waveform) memory 1, 2, or 3. Finally, press [3] to view the memory contents.
- From FlukeView 860, select Instrument - Get Waveform - (1, 2, or 3) to view the current memory contents.

When you are satisfied about the status of GMM waveform memory, use the following procedure to save a waveform from FlukeView 860 to GMM memory:

1. Open a waveform window on FlukeView 860.
2. Select Instrument - Send To. A Send dialog box (Figure 19) appears.

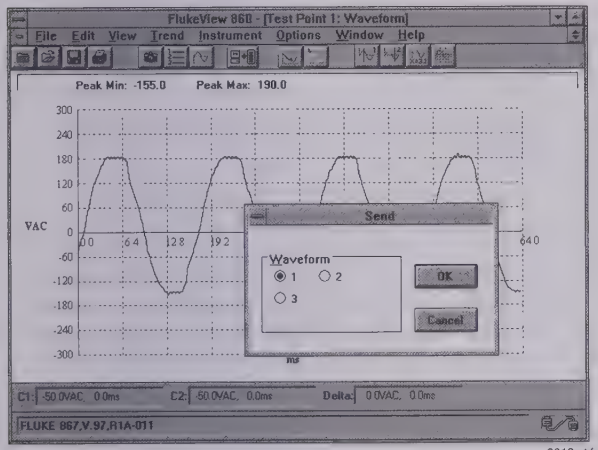


Figure 19. Sending a Waveform to GMM Memory

1. Select the GMM destination memory for the waveform; then click OK. After a short time, the following message should appear:

   Send Waveform Success!

2. Click OK.

3. If the waveform cannot be sent, the following error message appears:

   Error sending Waveform

   Refer to Error Messages at the end of this manual for additional information.

Exporting a Waveform to Other Applications

Export a waveform as a .csv file. This file can then be imported into a different software application. To export a waveform, use the following procedure:

1. Open a waveform window either by selecting a waveform record in the File Window and clicking Display or by selecting Instrument - Get Waveform and specifying the waveform.

2. Select File - Export. The Export dialog box (Figure 20) appears with a preset .csv filename extension.

3. Type in a file name and click OK. The waveform is now saved to the specified file and is ready to be placed in another software application.

4. Start the destination application software, and open the .csv file. For example, in Microsoft Excel, select File - Open and specify a waveform .csv file. Two columns of numbers appear, representing time and

amplitude at sample points along the waveform. You can use these numbers to reconstruct the waveform as a chart or to analyze the waveform further.

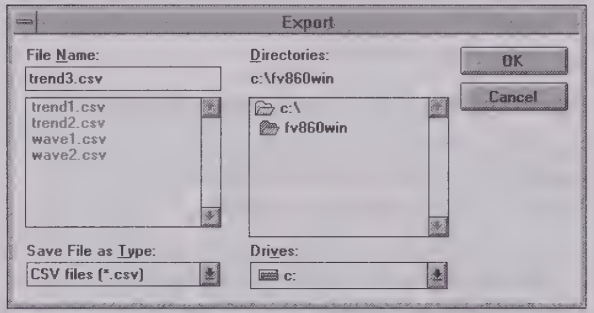


Figure 20. Export Dialog Box

Adding a Waveform to a FlukeView 860 File

Create a waveform record and display the related waveform window with the following procedure:

1. Select Instrument - Get Waveform.
2. Select the Present GMM waveform or a waveform stored in one of the GMM memories (1, 2, or 3.) Click OK. The waveform record appears in the file. Then the waveform information itself appears.
3. To change the name of the record, select the record in the File Window, then click Change. An Information dialog box appears.
4. Change the name of the record and annotate as needed.
5. To display the annotations at the bottom of the window, select Display on Window.
6. Click OK. The new name appears in the record line and in the waveform window. If selected, your notes appear at the bottom of the waveform window. If not selected for display, your notes can be viewed and edited at any time by clicking Change again.
7. Select File - Save to store the waveform record in the current file.

Printing a Waveform

You can print any waveform displayed in its own window on FlukeView 860. This can be a window opened from a record in the File Window or a window created with Instrument - Get Waveform. Select File - Print to initiate printing.

Component Test Signatures

Component Test signatures can be stored in GMM waveform memories or as records in a FlukeView 860 file. Although resembling waveforms, these signatures are actually lissajous-type patterns derived when voltage and current are applied to a deenergized component or circuit node. Component Test signatures are stored as waveforms in the GMM and as waveform records in FlukeView 860 files. Min/Max, cursor, and scaling are not available with Component Test signatures. A sample Component Test signature is shown in Figure 21.

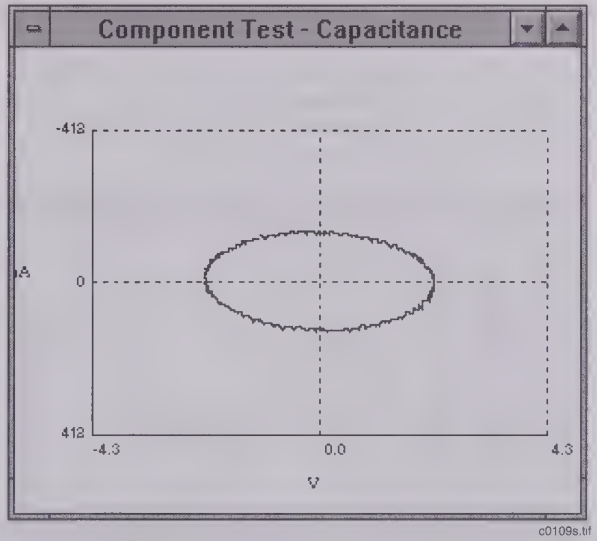
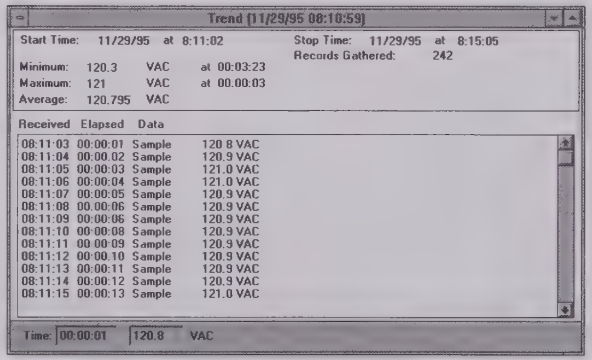


Figure 21. Component Test Signature

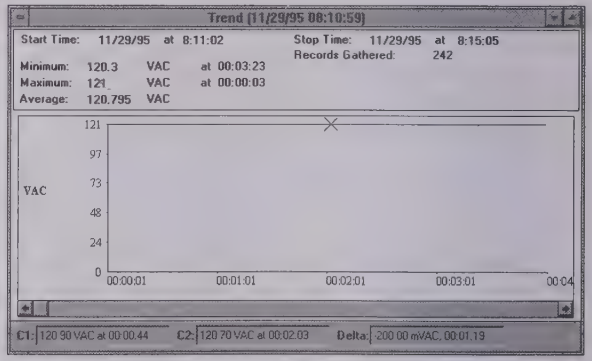
Trend Data

Open a trend record by selecting the record in the File Window and clicking Display. A trend window then opens in Text View (Figure 22). Select Trend - Graph View (Figure 23) to view the trend information graphically.



c0039s.tif

Figure 22. Trend Text View



c0100s.tif

Figure 23. Trend Graph View

Trend data can be collected in the following GMM functions: VAC, VDC, mVDC, Ohms/Continuity, A, and mAuA.

Trend data cannot be collected in Logic, Component Test, and Diode/Capacitance Test. If you select Trend - Start when the GMM function does not support trend, the following message is returned:

> Trend is not supported in the current instrument setting.

Starting and Stopping Trend Data Collection

You can display GMM trend readings on the PC screen as they occur on the GMM. Refer to the *860 Series Users Manual* for detailed Trend Mode information. Trend readings can be initiated in two ways, as described below.

Note

You can start trend even if the GMM is not in Trend Mode. (You may want to verify that trend type and trend interval are set correctly on the GMM.)

1. If Trend Mode is not already selected on the GMM, but the selected function allows for Trend Mode display, use the following procedure:
   a. Select Trend - Start from FlukeView 860.
   b. A trend record is created in the File Window, and a new trend Text View window opens automatically.
   c. Trend readings begin appearing in the trend window.
   d. To stop receiving trend measurement data, select Trend - Stop.
2. To select a specific trend interval on the GMM and display trend data, use the following procedure:
   a. Select Trend Mode by pressing DISPLAY MODE - 4 and either 2 (for a longer interval) or 3 (for a shorter interval).
   b. Select Trend - Start from FlukeView 860.
   c. A trend record is created in the File Window, then a new trend Text View window opens automatically.
   d. Trend readings begin appearing in the trend window.
   e. To stop receiving trend measurement data, select Trend - Stop.

If You Change Trend Type

While trend data is being collected, changing the trend type on the GMM stops data collection and returns the following error message:

> Trend has been stopped because the trend type has changed.

You must then select Trend - Start again to begin additional data collection. Changing the trend interval on the GMM does not stop data collection. However, since FlukeView 860 plots trend graphs using the interval for the first data point in the trend record, the trend graph becomes ambiguous if the interval is subsequently changed.

Using Cursors With Trend Graph View

Note

Cursors can be used only on waveforms and trend graphs.

You can view a text display of trend data point values at one or two cursor points. A crosshair appears for Cursor 1, and an X appears for Cursor 2. Time of occurrence (X-axis) and amplitude (Y-axis) are then defined at crosshair and X cursor points. When both cursors are used, difference (delta) time and amplitude values are also calculated and displayed. Use the following procedure:

1. Display your trend data from the GMM. The trend data appears initially in text format (default).
2. Select Trend - Graph View. The trend data appears in graphical format.
3. With the trend graph displayed, select View - Cursor 1. A crosshair appears at the left edge of the graph. At the bottom of the screen, elapsed time and amplitude values appear. Reposition the crosshair cursor by clicking once at the new location.
4. Select View - Cursor 2. An X appears at the left edge of the trend graph. At the bottom of the screen, elapsed time and amplitude values appear for the X cursor. Reposition the X cursor by clicking once at the new location.

Note

Cursor time represents elapsed time since trend start for the presently displayed trend information.

The time and amplitude delta values appear in a third box when both cursors are active. You can turn Cursor 2 off and on independently. Turning Cursor 1 off deactivates both the crosshair and X cursors.

After activating both cursors, use the Tab key or the right mouse button to toggle between the two cursors. Use the

right and left arrow keys or the mouse to reposition the selected cursor.

Viewing Min/Max in Trend Graph View

You can direct FlukeView 860 to calculate and display the minimum, maximum, and average values encountered in the present trend Graph View session. With the trend graph displayed, select View - Min/Max. The minimum, maximum, and average values appear at the top of the trend window.

Note

The average displayed for the trend in FlukeView 860 is not as precise as the average displayed in Min/Max on the GMM. The average in FlukeView 860 is only for the information that has been transmitted. The average on the GMM is continually updated.

Adding Trend Data to a FlukeView 860 File

To save trend data as a trend record in the File Window, use the following procedure:

1. Open the desired file in the File Window.
2. Create a trend record with either of the following procedures:
   - Start a new set of trend readings. Select Trend - Start. A new window opens and repeating measurements begin. When you have obtained the desired number of measurements, select Trend - Stop. Measurement updates stop and a trend record is added to the File Window.
   - Get a waveform (Trend Mode) memory from the GMM. Select Instrument - Get Waveform. Then select Present (if the GMM is already in Trend Mode) or 1, 2, or 3 for a trend screen saved in memory. A trend record is added to the File Window. Note that time and date of retrieval by FlukeView 860 are used to identify this record.
3. With this record selected in the File Window, click Change. An Information dialog box appears.
4. Name the record and add annotations in this box. To display the annotations at the bottom of the trend window, select Display on Window.
5. Click OK. The record now appears with its new name in the File Window and the trend window. If Display on Window is checked, the annotation appears at the bottom of the trend window.
6. Select File - Save to store the trend record in the current file.

Exporting Trend Data to Other Applications

Use the File - Export selection to save trend data as a .csv (comma-separated values) file that can be imported into other software applications. To save trend data in exportable form, use the following procedure:

1. Select a trend record from the File Window and click Display. Text View or Graph View can be used as a starting point.
2. Select File - Export. The Export dialog box (Figure 20) appears with .csv filename extensions. All existing .csv files are also listed in this box.
3. Type in a file name and click OK. The trend data is saved as a .csv file.
4. Start the destination application software, and open the .csv file. For example, in Microsoft Excel, select File - Open and specify a trend .csv file. Five columns of numbers appear. You can use these numbers for trend analysis or to reconstruct the trend graph as a chart.

Comma-separated trend values appear in the following format in a .csv file:

- Real (PC) time,
- Elapsed time since start of trend,
- Type of data (Sample, High/Low, or Average),
- Reading value (two values if High/Low type),
- Reading units

Examples of .csv data are:

```
13:01:20,00:00:01,Sample,239.98,VAC
13:01:21,00:00:02,Sample,239.99,VAC
13:01:22,00:00:03,Sample,239.90,VAC
```

These example values would appear in the following format when opened in Microsoft Excel:

13:01:20	00:00:01	Sample	239.98	VAC
13:01:21	00:00:02	Sample	239.99	VAC
13:01:22	00:00:03	Sample	239.90	VAC

Printing Trend Data

You can print trend data with Graph View or Text View displayed in the active window. In Text View, the entire set of trend data is printed. In Graph View, only the portion of the graph visible in the window is printed. Select File - Print to initiate printing.

Configurations

Select a configuration record and click Display to view configuration information. The configuration is opened as text in a new window.

You can exchange configuration text information between FlukeView 860 and the GMM in the following ways:

- Retrieve the present GMM configuration
- Retrieve a GMM configuration memory
- Display a FlukeView 860 configuration record
- Send a FlukeView 860 configuration record to GMM configuration memory

Note

The same text format is used for configuration information obtained from PC records, GMM configuration memory, or GMM present configuration.

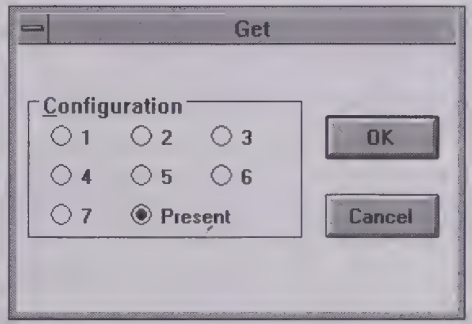
Note

A configuration cannot be edited or changed in any way while it is displayed on FlukeView 860. A configuration can only be created from actual settings on the GMM.

Getting the Configuration from the GMM

View the present GMM configuration or any of the GMM configuration memories with the following procedure:

1. Select Instrument - Get Configuration. A Get dialog box appears.
2. Select Present (for the configuration now in use) or 1 through 7 (for a configuration memory) in the dialog box (Figure 24).
3. Click OK. The text configuration description is then displayed in a new window.



c0040s.tif

Figure 24. Getting a GMM Configuration

Adding a Configuration to a FlukeView 860 File

Save any number of GMM configurations as configuration records in the File Window. If you need to save a group of configurations as a way to recreate the conditions under which certain measurements were made, you may want to open a new file (File - New) and store all the configuration records in one place. Change the name of each record as needed and annotate notes to keep track of configuration usage and history.

The following steps illustrate a typical sequence for storing, naming, and annotating the GMM's configuration:

1. With a file open, select Instrument - Get Configuration. The Get dialog box (Figure 24) opens.
2. Select the Present configuration or one of the 7 configuration memories.
3. Click OK. The new configuration record line appears in the File Window, then the configuration text information appears in a new window.

Note

If you attempt to get a configuration from an empty memory location, "No data was saved in this memory location" is returned.

4. If you want to change the record name and add notes, click Change from the File Window. An Information dialog box (Figure 25) appears. Change the record name and add notes while this dialog box is open.
5. To display the annotations at the bottom of the window, select Display on Window.
6. Click OK. The new name appears in the record line and in the configuration window. If selected, your notes appear at the bottom of the configuration window. If not selected for display, your notes can be viewed and edited at any time by clicking Change again.
7. Select File - Save to store the configuration record in the current file.

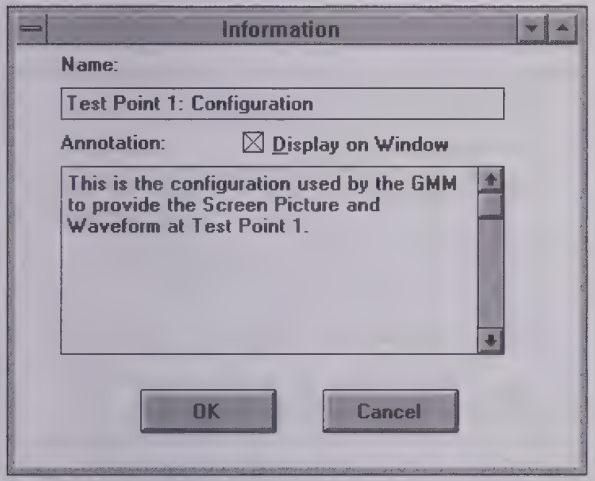


Figure 25. Information Dialog Box

Sending a Configuration to the GMM

Use FlukeView 860 to install configurations directly in GMM configuration memory. This ability allows you to preconfigure the GMM to make a specific type of measurement. These configurations can originate from a GMM memory or a record in a FlukeView 860 file. Seven memory locations are available on the GMM for storing configurations. Use the following procedure to send a configuration to GMM memory:

1. Select a configuration record and click Display.
2. Select Instrument - Send To. A Send dialog box (Figure 26) appears.
3. Select the GMM configuration memory and click OK. After a brief pause, the following message appears:

   Send Configuration Success!

   Click OK. If the configuration cannot be sent, the following error message appears:

   Error sending Configuration
4. Refer to Error Messages at the end of this manual for additional information.

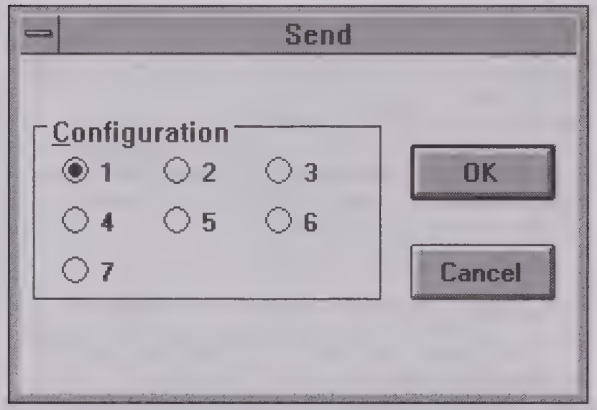


Figure 26. Sending a Configuration to the GMM

Using a Stored Configuration on the GMM

Refer to the *860 Series Users Manual* for complete instructions on using a stored configuration. Remember that the source for the configuration stored on the GMM can be the configuration in use by the GMM or a record sent from a FlukeView 860 file. In either case, the configuration always originates from the GMM; no subsequent editing of a configuration is allowed.

Printing

Select File - Print to print from any FlukeView 860 window containing the following types of records:

- Configuration window
- Waveform window
- Screen picture window
- Trend Text View window
- Trend Graph View window

The complete File Window and the Instrument Display cannot be printed. If you attempt File - Print from an ineligible window (e.g., directly from the File Window with no record displayed), the following message appears:

> Cannot print data from the current window.

The following printing qualifications apply:

- Displayed, printable records can be obtained from existing records or directly from the instrument.
- If text information (e.g., minimum and maximum values) is provided with a waveform or graph, only the waveform or graph is printed.

Select File - Printer Setup to change the printer type and port. In Windows, printer type and port can also be set in Print Manager. In DOS, HP printer type and LPT1 port are preset and can only be changed by selecting File - Printer Setup.

Exchanging Data With Other Applications

Importing Records From Other FlukeView 860 Files

To copy records from one file to another, use the following procedure:

1. Open a destination file (either a new .fdf file or an existing .fdf file.)
2. Select File - Import. The Import dialog box (Figure 27) appears.
3. Select a source file; then click OK. A list of records found within the source file appears.

Note

The default record name assigned by FlukeView 860 includes a time and date stamp. You can edit the default name by selecting the record and clicking Change. Figure 28 shows examples of default and edited record names.

4. Highlight the record(s) you want copied from the source file.
5. Click OK. The selected record(s) are copied to the destination file.

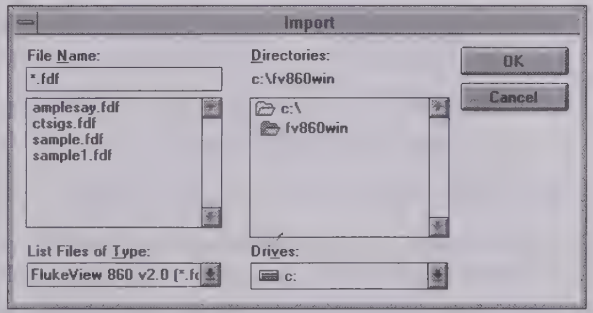


Figure 27. Import Dialog Box

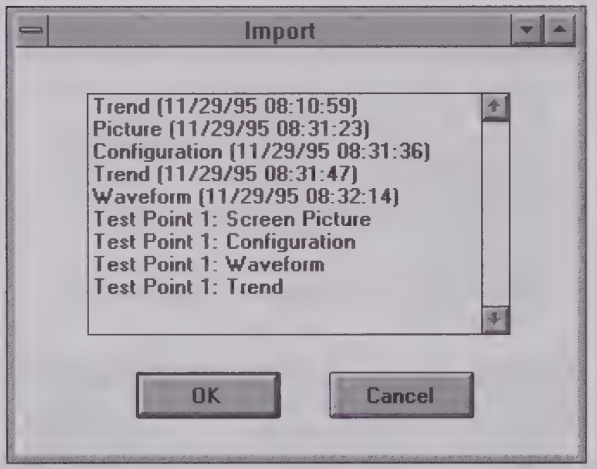


Figure 28. Importing Records

Adding FlukeView 860 (DOS) Version 1 Files

To add a version 1 file as a new record in a version 2 file, use the following procedure:

1. Select File - Import. The Import dialog box appears, with two choices under List Files of Type (lower left corner of box).
2. Select FlukeView 860 v1.0 (*.86?) to import a DOS file saved in Version 1 format.
3. Select the v1.0 file you want to import and click OK.
4. A new record containing the data is created in the FlukeView 860 file window. This record is given the same name as the file just imported.

Note

*The new record will be a screen picture (from a *.86s file), a trend (from a *.86t file), or a configuration (from a *.86c file); Version 1 does not store waveforms.*

Using the Clipboard to Copy Data to Other Applications

You can copy the contents of a window to a different software application via the Windows clipboard. A copied window appears in the destination as it did in the source. Text copied from the source appears as text in the destination. A graphic copied from the source appears as a graphic in the destination. Use the clipboard to copy data with the following procedure:

1. Select File - Open and choose the record to be copied.

2. Select Edit - Copy. The data is copied to the Windows Clipboard.
3. Open the destination application software.
4. Select Paste. The data is copied from the Windows Clipboard and appears in the same format (text, waveform, etc.) as used in the source file.

Exporting Records to Other Applications

Select File - Export to initiate the export procedure. The Export dialog box shown in Figure 20 appears. Specify a file name and click OK.

- Screen picture records are exported as .pcx files.
- Trend and waveform records are exported as numeric data to other applications. Destination applications handle .csv files in various ways. For example, spreadsheets load each set of between-commas numbers in a separate cell.
- Configuration records cannot be exported.

If you attempt to export without a trend, waveform, or screen picture record selected or displayed, the following message is displayed:

> Make sure the current window is a Picture, Waveform, or Trend.

The Export procedure differs somewhat for each type of record. Refer to the following topics in this manual for more information:

- "Exporting a Screen Picture to Other Applications"
- "Exporting a Waveform to Other Applications"
- "Exporting Trend Data to Other Applications"

File Formats

You will encounter file formats identified with the following extensions while using FlukeView 860:

- .fdf

  FlukeView 860 Data Format (.fdf) is used for all files containing records of screen pictures, configurations, waveforms, and trend data. This format is automatically selected whenever you select File - Save or File - Save as. FlukeView 860 version 2 creates and uses only .fdf files for record storage and retrieval.

- .86s .86t .86c

  These file extensions, which were used with FlukeView 860 version 1 files, can be copied into a version 2 file as new records using the File - Import selection. The new record uses the same name as the version 1 file.

- csv

  A trend or waveform record can be exported as a comma-separated value (.csv) file for use in other applications.

- .pcx

  A screen picture can be exported in .pcx format for display in another application.

FlukeView 860 for DOS

FlukeView 860 for DOS (Version 2) performs virtually all the functions of FlukeView 860 for Windows. This manual is written to describe the Windows version; if you are using the DOS version, the following differences apply:

- The Edit pull-down menu, which accesses the Clipboard in Windows, is not available in DOS.
- The File - Print Setup selection is available to set printer type and port. Default settings in DOS are HP printer type and LPT1 printer port. (Printer type and port can also be changed in the Windows Print Manager.)
- Help does not use graphics.
- You may need to use a slower baud rate, depending on the speed of your computer.

Computer requirements for DOS are as follows:

- 3.5 Floppy Disk Drive
- Hard Disk Drive
- Serial port (RS-232) configured as COM1: or COM2:
- DOS 3.3 or higher
- 286, 386, 486, or higher PC
- 2 MB RAM
- One Fluke 860 Series GMM can be supported.
- Mouse, bus or serial (Optional.) With a serial mouse, you must have another free serial port for your GMM.
- Printer (optional). A PostScript or HP printer is needed for graphical printing.

GMM-to-PC FlukeView 860 connections are the same with DOS and Windows versions.

Installing FlukeView 860 DOS

Use the following installation procedure:

1. Find the 3.5-inch disk labeled "FlukeView 860 DOS, P/N 948968."
2. Insert the disk in the a: or b: drive. The following steps assume that you are using the b: drive. If you are using the a: drive, just substitute a: wherever you see b:.
3. Type: **b:install**
4. The Installation Path dialog box appears and lists a directory (c:\fv860dos) to be created. Click Install if the name and path are acceptable. If you want a different directory or path, type your choice and click Install. If you do not have a mouse, press TAB to move to the Install button and ENTER to activate the button.

Starting FlukeView 860 DOS

After software installation and hardware connection, start up the program by entering **fv860dos** from the DOS prompt on your PC. Remember that you must normally be in your working directory when you enter this command.

Although **fv860dos** is the normal start up command from DOS, you may want to be aware of command switches that allow for simplified start up procedures. Refer to Table 6 for a complete description of the start up command possibilities.

Table 6. DOS Startup Commands

Command	Description
fv860dos	This is the normal start up command. FlukeView 860 for DOS enters graphics mode and attempts to auto connect with the GMM. Use this DOS start up command if your computer supports an EGA, VGA, or higher graphics and monitor system.
fv860dos /n	This special command starts FlukeView 860 without attempting to auto connect to the GMM. Connect to the GMM by selecting matching baud rate, parity, and port from the Communications dialog box.
fv860dos /m	Use this command with VGA monochrome displays.
fv860dos /m /n	Combine the two special command selections to run FlukeView 860 for DOS in VGA monochrome mode without auto connect.

Moving Around in DOS

If you have mouse capabilities, simply click on a menu selection, highlight your choice, and press ENTER.

Without a mouse, use the following procedures:

- Activate a menu selection by pressing ALT. Then press the key letter (underlined) for each menu selection. Finalize your selection by pressing ENTER.
- Pressing ALT also allows you to move among the menus with the right and left arrow keys and to highlight items in a pull-down menu with the up and down arrow keys. Finish your selection by pressing ENTER.
- In some dialog boxes, you will need to use the TAB or SHIFT-TAB keys to move from one selection box to the next.
- Refer to Table 8 for a list of common keys to use in absence of a mouse.

Error Messages

If FlukeView 860 cannot execute your menu or tool bar command, you will see an error message box. Refer to Table 7 for an alphabetical list of possible error messages.

Table 7. Error Messages

Cannot print from the current window. The current window contains information that cannot be printed directly.
Communication error. Check the communication settings and the cable. During AutoConnect or manual connect, FlukeView 860 has not been able to communicate with the GMM. The serial cable may be disconnected or connected to the wrong port on the PC. The GMM may be turned off. If this error occurs after you use the Communications dialog box (manual connect), the baud rate, com port, or parity setting attempted in that dialog box may also be wrong. During AutoConnect (always attempted at start up), all baud rate, com port, and parity combinations are attempted; the serial cable connection is probably the problem. Trying a slower baud rate may also solve some communication problems.
Error getting Configuration. Instrument - Get Configuration failed to complete; check for communication problems.
Error getting Waveform. Make sure the instrument is in a valid mode for Waveform capture. Instrument - Get Waveform failed to complete; check for communication problems. Also, check that the GMM function and display mode allow for a waveform display.
Error getting Picture. Instrument - Get Configuration failed to complete; check for communication problems.
Error opening file <filename>. FlukeView 860 could not find the filename in the path specified. The file and/or path may be named differently, or the file may be missing or corrupted.

Table 7. Error Messages (cont)

Error reading communication setting file. Default settings will be used. Communication parameters could not be read from the comm.cfg file.
Error saving communication setting file. Default settings will be used next time. Communication parameters could not be saved to the comm.cfg file.
Error sending Configuration. Instrument - Send To failed to complete. Check for a communication problem.
Error sending Waveform. Instrument - Send To failed to complete. Check for a communication problem.
Error starting Trend. Trend - Start failed to complete. Check for a communication problem.
Make sure the current window is a Picture or a Waveform or Trend. File - Export attempted without a screen picture, waveform, or trend displayed.
Make sure the current window is a Configuration or a Waveform. Instrument - Send To attempted without a configuration or waveform displayed.
No data was saved in this memory location. Instrument - Get Waveform or Get Configuration has been attempted on a cleared (empty) memory location.
The incoming data is a trend record. Data will be presented in a trend window. Instrument - Get Waveform attempted on the present display or a memory location that contains a trend screen. Trend screens are treated as graphs and are handled differently from waveforms.
Trend is not supported in the current instrument setting. Trend Mode is not available when the GMM function selector is set to Logic, Component Test, or Capacitance.

Table 8. Short Cut Keys

Ctrl + <space> (DOS) Alt + - (Windows)	Access the control menu for the current window.
Alt + H, or F1	Access help.
Alt + <letter>	Select a menu item by pressing Alt and a letter (underlined in the menu selection).
<space> (DOS)	Highlight the selection shown in dotted outline.
Tab, or F6 (DOS)	Move to the next window control.
Ctrl + Tab	Move to the next window in a group of windows.
F5 (DOS)	Refresh (redraw) the display.
Alt , or F10 (DOS)	Move between the current window and a menu associated with that window.
Shift Tab	Move to the previous window control.
Home	Move to the beginning of a line.
End	Move to the end of a line.
Alt + D	Display the selected record
Esc	Cancel a dialog box or close a pop-up menu.

Table 8. Short Cut Keys (cont.)

Ctrl F4	Close the active window
Alt + F4	Exit FlukeView 860 (Windows or DOS)
F3	Exit FlukeView 860 (DOS only)
Controlling Cursors (Crosshair and X Cursors, Waveform or Trend Graph View)	
←	Move graph cursors left.
→	Move graph cursors right.
Tab, or F6 (DOS)	Select the other cursor.
Shift Tab	If cursors are on in Waveform or Trend, shift between annotation and display windows.
Moving Around in Trend Text View	
Home	Move to the top of Trend Text.
End	Move to the bottom of Trend Text.
Page Up	Move up one full screen of Trend Text
Page Down	Move down one full screen of Trend Text
↑	Move up one record in Trend Text or one division in trend graph.
↓	Move down one record in Trend Text or one division in trend graph
F10	Move between the current trend window and a menu associated with that window.
Shift F7	Stop trend.